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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,952	03/16/2004	Ikuya Miyazawa	9319G-000739	2901

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EXAMINER

GEYER, SCOTT B

ART UNIT	PAPER NUMBER
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2812

DATE MAILED: 08/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/801,952

Applicant(s)

MIYAZAWA, IKUYA

Examiner

Scott Geyer

Art Unit

2812

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) 6-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4 and 35 is/are rejected.
- 7) ☒ Claim(s) 2,5 and 34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 070506.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Applicant note: claims 1-35 are pending in the instant application with claims 6-33 being withdrawn without traverse. Claims 34 and 35 were added as new claims prior to the previous office action but were not treated on their merits. Therefore, claims 1-5, 34 and 35 are treated on their merits below.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 23, 2006 has been entered.

Information Disclosure Statement

The references cited within the IDS document submitted on July 5th, 2006 (paper no. 070506) have been considered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 4 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayasaka et al. (6,809,421 B1) in view of Pace (5,793,105).

As to **claim 1**, Hayasaka et al. teach a method of making a semiconductor device with electrodes, as detailed in figures 7A-7I. Hayasaka et al. do not teach a distal end portion of the electrodes protruding from the rear surface of the substrate. However, Pace teaches substrate electrodes 520, 521 (as seen in figures 5a-5h) that have a protruding portion 522. Pace also teaches a cross sectional area of the distal end portion being equal to or smaller than the cross sectional area of the electrode in the substrate. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of Hayasaka et al. with protruding electrodes as taught by Pace since protruding electrodes lend efficiency to the bonding process (see column 4, lines 21-28).

As to **claim 3**, see Hayasaka et al., column 12, lines 46-52.

As to **claim 4**, see Hayasaka et al., column 13, lines 49-51.

As to **claim 35**, Pace teaches the electrode having a stepped cross-section, as shown in figure 5a.

Allowable Subject Matter

Claims 2, 5 and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed May 23rd, 2006 have been fully considered but they are not persuasive. Applicant has amended claim 1 to include the limitation that the cross sectional area of the distal end portion being equal to or smaller than the cross sectional area of the electrode in the substrate. However, Pace clearly shows a T-shaped conductive structure similar in shape to the structure of the applicant's figure 1. The one side of the conductive structure, the "electrode side", is the top of the T shape. The other side of the conductive structure, the "distal end portion", is the base of the T shape. Therefore, the cross sectional area of the distal end is smaller than the cross sectional area of the electrode portion. This is also shown in figure 5a of Pace, wherein the numerals "520" or "521" are pointing to the "distal end side" and numeral "522" is pointing to the "electrode side". As is clearly shown the cross sectional area of "520" or "521" is smaller than the cross sectional area of "522". Therefore, the combination of Hayasaka et al. and pace, as used above for the 35 USC 103(a) rejection is maintained.

Conclusion

This action is non-final.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Geyer whose telephone number is (571) 272-1958. The examiner can normally be reached on weekdays, between 10:00am - 6:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lebentritt can be reached on (571) 272-1873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SBG
July 27, 2006

SCOTT B. GEYER
PRIMARY EXAMINER

SBG 7/27/06